

# Physics Free Press

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## ***PHYSICISTS HAVE KNOWN SIN***

J. Robert Oppenheimer

# EDITORIAL

This issue of the *Physics Free Press* has three main goals:

- 1) To help encourage the many left-sympathizing physicists to become even more radical and politically active;
- 2) To shock the more apathetic physicists out of their complacency;
- 3) To frighten the "old fart" physicists and war criminals.

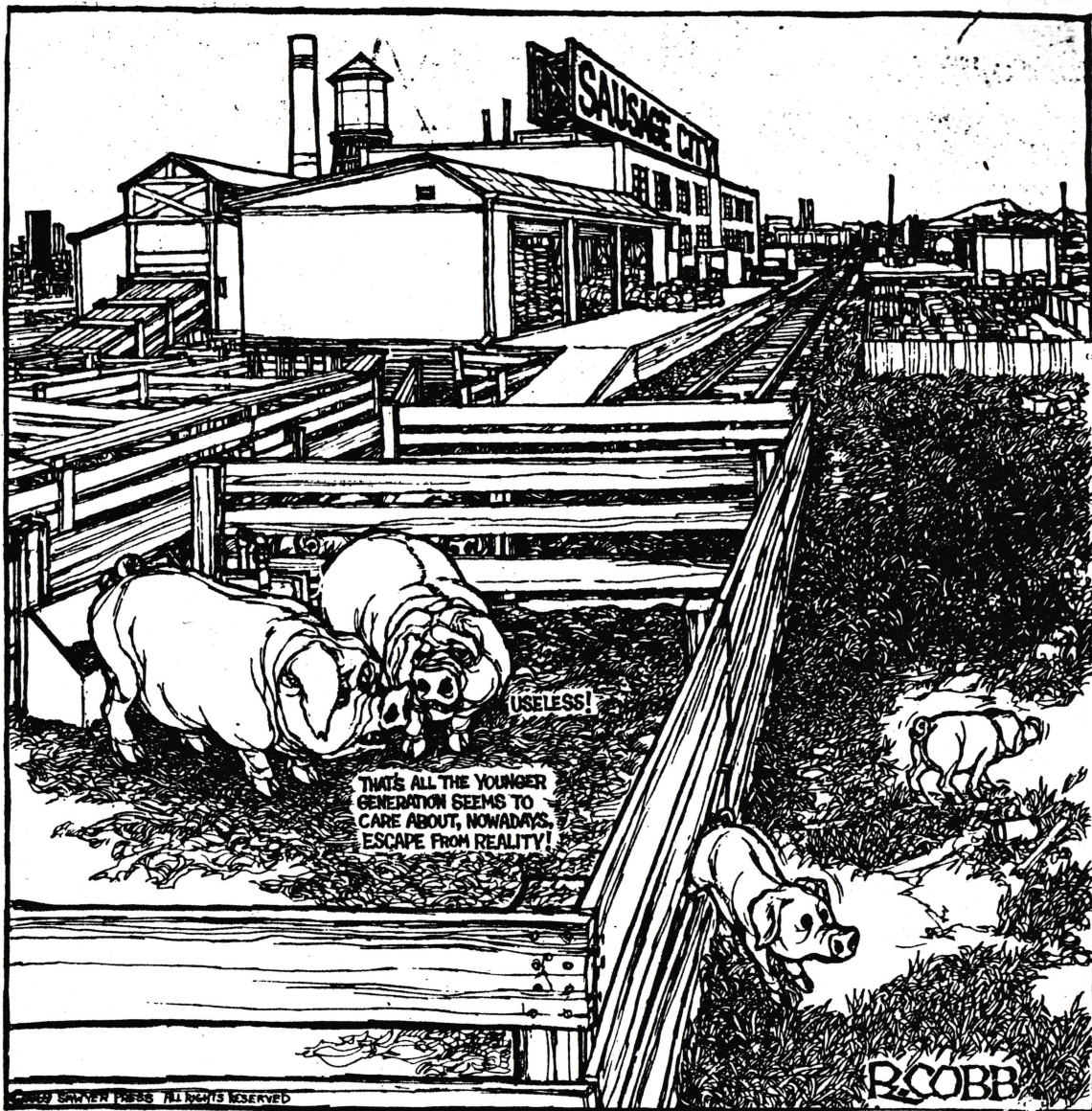
On the other hand, the goals of publications like *Physics Today* (voice of the American Institute of Physics) are:

- 1) To ignore the increasing radicalization and anger of young physicists over unemployment, the draft, and war-supportive research;
- 2) To make apathetic physicists more aware of new developments in dynamic nuclear Mossbauer laser digitation techniques;
- 3) To review new elementary physics books and take polls.

All the articles herein are written by physics graduate students and post-docs. They concern unemployment, weapons research, the Army, alternative culture—and unlike the establishment media and the AIP—they do not ignore the real world.

Physics has been prostituted into an instrument of mechanized nuclear war and a weapon to protect U.S. capitalism against Third World Liberation movements. But our moral outrage and refusal to do military research work is hardly a sufficient response; there is always someone around who will still do Pentagon research if enough money and prestige are offered. Therefore in order to oppose the distinctly reactionary political use of our work, we must organize politically, perhaps even in a revolutionary way, if necessary.

Each issue of the *Physics Free Press* is put out by groups of radical physicists around the country on their own initiative. If this issue encourages others to publish future issues, it will have been successful.



## Letter to the Editor

Dear editor,

The physics community is very sharply divided into a nobility and a peasantry, the second consisting of numerous unnamed students, post-docs, and non-tenured faculty who do most of the actual work, and the first, consisting of those medieval feudal robber barons known in the bureaucratic jargon of the NSF and AEC as "principal investigators." (It would seem as though the primary purpose of such bureaucratic jargon is to confuse the uninitiated. How is a senator or congressman, let alone a poor dumb taxpayer, to know that it is very seldom that a "principal investigator" will ever personally "investigate" anything other than new improved ways to extract money from the AEC and NSF, which is to say, from the public treasury.) It is interesting to note that the psychological weapons which the aristocracy uses against the peasantry are always the same, no matter where you find the division between nobles and peasants, in physics, in colonized countries, in the capitalist system itself. The primary weapon is the myth of the "meritocracy," the people on top are on top because they have more "merit" than the people on the bottom.

In physics the myth says that all the "good" people get jobs and it is only those physicists who are "no good" who have trouble finding jobs. However, when you ask what "good" really means in actual practice, it means the ability to get a favorable letter of recommendation from the physics establishment. This,

in turn, turns out to depend much more on how assiduously you have kissed these fellows behinds and/or done their shitwork than on your ability as a physicist.

I think we have to keep in mind what our ultimate goal is. I believe that the guys who run physics, those guys who hold large AEC or NSF contracts, the directors of the various laboratories and "centers," the guys who sit on the various advisory committees to the AEC and NSF, the guys on the National Science Board, the guys who sit on the committees that decide who gets Sloan fellowships, those 117 "leading" scientists who decide who gets NSF fellowships and who starves, all these bastards, by deciding that it is more important to support immensely wasteful projects like SLAC, NAL, the 15" bubble chambers, etc. that it is more important to pay summer salaries and travel expenses rather than give jobs to physicists, these SOB's have shown that they are incapable of exercising their responsibilities as decent, moral, humane human beings. It is therefore incumbent upon us, as our duty more than our right, to remove these persons from positions of power by whatever means are necessary.

As for the tactics by which this can be accomplished, I think that we can learn a few things from the Vietnamese. The primary reason that "we" are losing the Vietnam war is that the Saigon government has totally lost legitimacy in the eyes of the Vietnamese people. They not only refuse to cooperate with it but they work actively to undermine it.

They realize that this government was not chosen by them nor does it work for their interest. They actively cooperate with the Provisional Revolutionary Government which they regard as their government. Our primary task is therefore to delegitimize the present physics leadership in the eyes of most physicists. We must emphasize that this leadership was not chosen by them (APS elections are certainly no more democratic than those run by President Thieu) and point out it specifically works against the interests of most physicists (for example, by having money spent for NAL and SLAC instead of jobs for physicists). We must get the majority of physicists so disenchanted with the present leadership that they will not only refuse to cooperate with it but so that they would work actively to undermine it. Given what this leadership has been up to, this should not be too difficult.

As for the morality of physicists, bear this in mind. Those guys who are respon-



sible for NSF policy, those guys who sit on the National Science Board and various NSF and AEC advisory committees (you know who they are, since those are the guys whose lectures are taken over every other week by a grad student or junior faculty member while they go off to Washington or elsewhere), know damn well what the situation is. They know damn well that there are hundreds if not thousands of physicists unemployed, under-employed or temporarily employed. Knowing this damn well, they have decided that it is more important to keep paying summer salaries, to keep paying for European junkets, to keep building things like NAL and 15" bubble chambers, etc. than to give jobs to physicists.

NAL is really just the most blatant example of what might be called the "gunk effect." Whenever there is a choice between hiring a couple of hundred young Ph.D.'s or buying an expensive, impressive piece of equipment, the equipment (gunk) always wins. Hence, for example, Argonne recently spent more than one million dollars to build the 15" bubble chamber which is big enough to drown an elephant. I have seen some labs where the cost of just the oscilloscopes would pay my salary for a year or two.

Theory is cheap but we get no money. What we will eventually wind up with is lots and lots of useless data and no theorists to make sense out of it. In fact, if they would have waited a couple of years for the development of superconducting magnet technology, they probably could have built a 500 Gev machine for half the cost, which would

(continued on pg 14)

Q. How Many Nuclear Disasters Have There Been?

A. Too many. The AEC's tight-lipped, know-nothing security policy actively suppress information concerning nuclear disasters. On October 1966, the Fermi reactor at Lagoona Beach came within a hair's breadth of tragedy. Its uranium fuel rods overheated due to a severe malfunction in its sodium coolant system, causing a potential run-away chain reaction and explosion that could have killed as many as 133,000 people in the Detroit area (according to an unusually candid AEC report). Fearful of accidentally creating critical mass, scientists spent one month debating the problem and about one harrowing year carefully dismantling the reactor.

On Jan. 3, 1961, the experimental S2-1 reactor near Idaho Falls, Idaho, exploded, killing three men. A power surge in the three-megawatt reactor was caused by improper handling of control rods.

On May 11, 1969, a disastrous \$45 million fire at the plutonium plant in Rocky Flats, Colorado released undetermined quantities of plutonium into the air and soil. AEC officials investigated the matter and found no cause for alarm and no radiation leakage and criticized the work of "sensationalists." On Jan. 1970, however, Dr. Edward Martell, a nuclear chemist, released a damaging report of soil contamination by plutonium. Further private investigation disclosed poor security and lax radiation monitoring on the part of the AEC. The plant, run by Dow Chemical, stored oil-saturated plutonium above ground in metal drums since 1958, causing considerable radiation seepage due to frequent leaks.

Q. Are Nuclear Reactors Safe?

A. Criminal neglect of radiation monitoring and inadequate funds for safety precautions make reactor sites potential cemeteries. Even Dr. Edward Teller states: "... a powerful nuclear reactor which has functioned for some time has radioactivity

# EVERYTHING YOU ALWAYS WANTED TO KNOW ABOUT AEC (BUT WERE AFRAID TO ASK)



MAN  
DEMONSTRATING HIS  
SUPERIORITY OVER  
ANIMALS.



stored in it greatly in excess of that released from a powerful nuclear bomb ... A gently seeping nuclear reactor can put its radioactive poison under a stable inversion layer and concentrate it onto a few hundred square miles in a truly deadly fashion ... Nuclear reactors do not belong on the surface of the earth. Nuclear reactors belong underground ..."

Q. Are There Known Leukemia Cases Caused By The AEC?

A. On March 17, 1953, a 16-kiloton bomb was exploded, releasing a toxic radioactive cloud over Kanob, Utah, and Redonia, Arizona. One leukemia specialist from Salt Lake City described the

resultant tragedy as an "epidemic" in leukemia cases. The U.S. Public Health Service investigated both communities and confirmed the outbreak of leukemia, but refused to venture any cause. Elmer Jackson, a local rancher, interviewed by journalist Paul Jacobs, tells of being burned by the radioactive cloud while rounding up cattle one day; he subsequently developed thyroid cancer. Residents in both sleepy communities feel powerless as their relatives die off in increasing numbers while health officials refuse to comment.

In 1960, Dr. Harold Knapp, then with the AEC, was investigating "hot spots," when he stumbled upon unusual doses of Iodine-131 in milk found in St. Louis, Missouri. Stunned, he quickly investigated and found dismally poor radiation monitoring of milk after the 1953 A-bomb tests. The AEC tried to suppress his report, not on the basis of his professional qualifications, but because it would "make the (Atomic Energy) Commission out to have been liars." When the report was belatedly published, the AEC censored the part which revealed that the thyroid glands of babies would be exposed to 120-440 rads in S. George, Utah, following the 1953 tests. (.17 rads per year is considered "safe" for adults).

Paul Jacobs has interviewed the pilots of the planes which regularly dropped the H-bomb and found unusual leukemia rates and poor radiation monitoring. He interviewed several wives of dead pilots (including one pilot who had half his face removed in 1968 due to cancer). He also found leukemia outbreaks in Midwestern towns like Parowan, Paragonah, Pleasant Grove (which regis-

tered six times the usual leukemia death rate) in Utah and also in Fredonia, Arizona. Unfortunately, he found systematic investigations of these deaths impossible, due to the miserable monitoring standards of the AEC.

Q. How Many Americans Will Die Because Of Radiation?

A. In 1969, Dr. Ernest Sternglass, a physicist from the University of Pittsburgh, estimated 400,000 possible infant deaths. Dr. Tamplin of the Livermore weapons lab, commissioned by the AEC to punch holes in Dr. Sternglass's figures, came up with a new, revised figure of only 4,000 deaths due to fallout. Dr. Tamplin, though at first determined to lay waste to sensational stories of radiation poisoning and deaths, eventually convinced himself of the inhuman, callous handling of radiation by the AEC. Dr. Tamplin and Dr. Goffman, both from Livermore weapons lab, have since published the book "Population Control through Nuclear Pollution," which charges the 32,000 additional deaths due to cancer can be attributed to the AEC's nuclear pollution and radiation guidelines of .17 rads per year, which the authors claim is ten times too high. Dr. Goffman has publically stated that the AEC standards "are irresponsible in a public health sense" and constitute "a legal license to murder in exchange for some benefits of atomic energy."

Q. Have Goffman And Tamplin Been Subject To Harrassment?

A. Yes. Drs. Goffman and Tamplin claim they have been harrassed, censored, and subject to pay cuts by the AEC, tactics often used by the AEC to silence "undesirables" and "sensationalists."

Q. How Much Peaceful Research Does The AEC Do?

A. 53 percent of its \$2 billion a year budget is earmarked for military purposes. The Plowshare project, much ballyhooed by the AEC for its peace time potential, now is slashed to \$8 million a year; 20 percent of the AEC budget goes to creating reactors, 950 of them polluting the countryside by the year 2000.

Q. What Is The Story On Uranium Miners?

A. The AEC refused to establish stringent standards for uranium miners; consequently, more than 100 miners have died due to lung cancer produced by inhaling radon gas found in these mines. The casual link between uranium mining and lung cancer was established long ago in Europe and is disrupted by no one, yet the AEC continues to bow to pressure from private interests which turn the miner's miserable lot into profit.

Q. Why Isn't Dr. Glenn T. Seaborg Locked Up?????



# war criminals i have known

*Physics Free Press* proudly announces that the annual Dr. M. F. Strangelove Award, given last year to Dr. Edward (the "Ham") Yeller, daddy of the H-bomb, will be given to Dr. Glenn T. (the "Turd") Seabottom, retiring as chairman of the AEC (Annihilate the Ecology Commission), who becomes our first WAR CRIMINAL OF THE MONTH. Dr. Glenn T. (the "Turd") Seabottom is commended by PFP for his outstanding support of megadeath, nuclear holocaust, and other nasty things.

PFP is sure that many of our devoted readers have fond memories of last year's winners many antics. At last year's AAAS meeting, for example, the "Ham" displayed



Glenn "Turd" Seabottom  
Nuclear Prostitute

his credentials as a comedian par excellence by tickling those radical ruffians to death with his eyebrows. And who can forget his lovely quote when he said that the nasty Test Ban Treaty would cramp

his style because now he would have to run computer simulations of H-bomb blasts instead of the real thing? (By the way, those rascals who managed to evade his eyebrows quickly succumbed when the "Ham" went into his imitations of his great Hungarian contemporary, Zsa Zsa Gabor.)

But last year's winner's many feats are overshadowed by the antics of that great cut-up, Dr. Glenn T. (the "Turd") Seabottom. Why, Dr. Yeller selfishly wanted to irradiate only those naughty Ruskies. Dr. Seabottom, a true liberal, wants to irradiate everyone! In his noble crusade to distribute free radiation to all, the Turd has dotted the countryside, in the great tradition of

Howard Johnson's, with nuclear polluting plants. Every nursing mother in America should be proud of the Turd's valiant attempt to give free Strontium-90 to all children and thereby replace DDT as America's number one darling. If this trend keeps up, the Turd's nuclear polluting plants will save America billions of dollars in electrical bills (not because the nuclear polluting plants are efficient, but because everyone's bones will be so irradiated that we'll all glow in the dark).

For those fans out in the audience, PFP has managed to gather some tidbits about Dr. Seabottom:

—his favorite disease: leukemia;  
—his favorite phrase:

"Radiation never hurt anyone";

—his astrological sign: Cancer;

—his favorite movie: *Fail Safe* ("I nearly split my gut laughing at all the funny parts");

—his favorite food: mushrooms.

He is currently writing a book "How Radiation Improved My Sex Life." If successful, he plans to follow it with another: "Sterility is Good for You."

His latest antic is to throw darts at pictures of those scientists who opposed his Amchitka blast. (Rumor has it that, between darts, he nibbles on his favorite dessert, baked Alaska.)

## and loved

## William Shockley's

# IQ

The following are some of the actual questions appearing on the Wechsler Adult Intelligence Test, which is considered the "best" (i.e., the least culturally, economically, and politically biased) of the standard IQ tests currently used. The official answers are printed below.

### I. INFORMATION

1. Longfellow was a famous man; who was he?
2. How tall is the average American woman?
3. What is the Vatican?
4. What is the main theme of the Book of Genesis?
5. What is the Koran?
6. Who wrote Faust?
7. What is the Apocrypha?
8. How far is it from Paris to New York?

### II. COMPREHENSION

9. Why should we keep away from bad company?
10. Why should people pay taxes?
11. Why are child labor laws needed?
12. Why does the state require people to get a license in order to be married?
13. What does this saying mean? "One swallow doesn't make a summer."

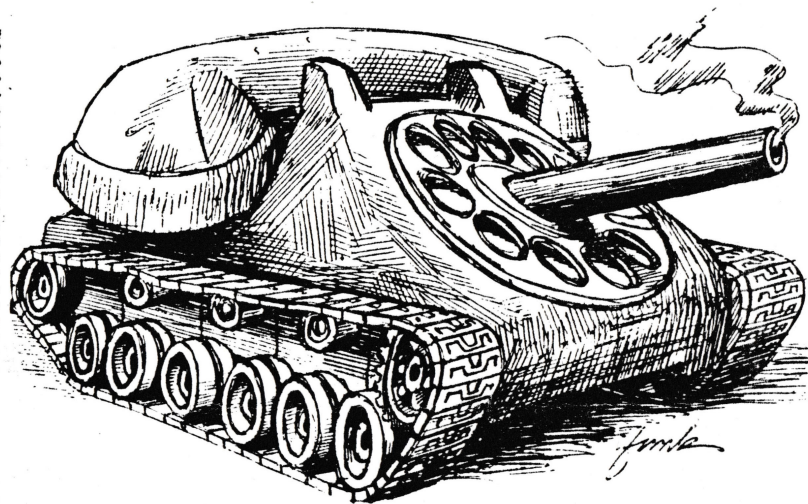
### III. SIMILARITIES

What is the similarity between the following things?

14. Wood—alcohol
15. Fly—tree

### ANSWERS:

1. Poet, author, writer.
2. 5'3" to 5'6"
3. Home of the Pope ... Seat of papal government.
4. Creation ... Beginning of the world ... beginning of man ... Early Hebrew history.
5. Mohameddan Bible or sacred writings.
6. Goethe ... Gounod.
7. Books of disputed authority in the Old Testament.
8. Any answer from 3000 to 4000 miles.
9. —A person is changed for the worse, corrupted, or improperly influenced by bad company.
10. 2—To support the government.
11. —Any two of these reasons: health, education, general welfare, exploitation, avoid cheap labor.
12. —For a public record.
13. —Don't generalize from a single instance.
14. —Organic substances ... Contain carbon.
15. —Both are living things.



## OBITUARY

### PARTICLE PHYSICS (1935-71)

*Physics Free Press* regrets to report the passing of Particle Physics, due to an overdose of APS, a volatile drug which is known to bring delusions of prosperity, good times, and full employment to the user during times of depression. Young physicists can attend the funeral services, which will be held in employment agencies and welfare lines all over the country. (Unfortunately, PFP has received reliable reports that many of her sisters, like Nuclear Physics, are addicted to even more powerful hallucinogens, like AEC, ABM, MIRV, and DOD.)

Particle Physics was born in 1935, with Yukawa's seminal prediction of the pi meson. Particle Physics matured quickly in the scientific community with the growth of quantum field theory and SU(3). Unfortunately, anyone as pure, vibrant, and youthful as Particle Physics inevitably finds attractive the risque and the forbidden. Ignoring all advice, Particle Physics had an affair with that rascal, War Research, and eventually bore him an illegitimate child, the Bomb.

At times, Particle Physics had dazzling displays of intellectual growth, like with current algebras and S-matrix theory, and at times she exer-

cised poor judgment, for she never quite got over her fascination with that seedy gentleman, War Research. Even as an elderly lady, the thought of using her creative talent to help War Research for the Vietnam War fascinated her.

Failing in health, she eventually became heavily addicted to the hallucinogen, APS, and rather than face the advice of her many young friends, she preferred to backroom company of Washington bureaucrats. Even when told that funds were needed for jobs for new physicists, she insisted on inflated summer salaries and travel money for all her cronies.

When asked what new

physicists will eat, she once remarked, "Let them eat 400 GeV protons." While in the company of Washington bureaucrats, she had an affair with one of the minor officials, leading to the birth of two illegitimate sons, SLAC and NAL, both hungry, spoiled, retarded, and unproductive.

Accounts differ as to the cause of her depression and illness in her later years. Some say her lover War Research no longer lavished gifts upon her as before. Others say the years took their toll on her ailing body.

PFP, however, has managed to obtain a doctor's report concerning her death. Con-

trary to the rosy press releases of her high-placed friends, we discovered that she suffered from an acute employment problem. In her final moments, incompetent doctors tried to administer large transfusions of funds to the wrong organs, according to the report. Her brain tissues, consisting of new graduate students and post docs, were curiously denied transfusions of funds in favor of the gall bladder, which consisted of ossified tenured faculty, many of them parasites living off her lucrative Defense contracts.

Amorality in science is well-illustrated in the case of research on chemical and biological warfare (CBW).

Science has developed a nice word to describe the field of biological warfare: "Aerobiology." Aerobiology is the science of spreading bacteria outdoors in aerosol sprays, usually by airplane. Diseases researched by U.S. university scientists, either under Pentagon contract or not, include tularemia, botulism, anthrax, Q fever, plague, brucellosis, and Venezuelan equine encephalitis.\*

## HEALTH PROBLEMS

It is claimed by the Army that research on these diseases is merely protection against possible health problems here. But this is belied by the fact that most of these diseases are very rare in the U.S. Furthermore, many of the diseases being studied are commonly spread by rodents and insects, not by aerosol sprays.

Also, these diseases are public health problems in countries like Russia, China, and many underdeveloped areas where we seem to do most of our fighting. If we could covertly launch an attack with a germ endemic to the victim region, it is much harder to detect in the first few critical days of public infection, particularly in underdeveloped areas, thus rapidly leading to an uncontrolled epidemic.

It has been calculated—again an interesting scientific problem—that a biological bomb affects 340 times the surface area as an equivalent weight nuclear bomb, with almost as high a mortality rate. It is certainly a potent weapon.

## RESEARCH AS USUAL

It is often said that biological weapons are too un-

\*It hardly matter that the U.S' and U.S.S.R. may reach an agreement concerning CBW stockpiling and use, even if it could be enforced, which it can't. Much of the scientific research with these weapons has already been performed, and both stockpiles and research can be reactivated quickly as needed.

# CHEMICAL and BIOLOGICAL WARFARE



predictable for use. This may not be an insurmountable problem. With the usual amoral phraseology of a "neutral" institution, one big university department advertises, "Graduate students interested in basic applied research problems of aerobiology and physics of aerosols are eligible for appointment."

It is also claimed that CBW is researched for defense against foreign biological attack. But then why hasn't a civilian immunization program been carried out by the government to protect the population? Protective measures after an attack are too late. Not even the most minimal public information has been disseminated concerning self-protection—in contrast to the high public awareness of fallout shelters.

Dr. J.S. Foster, Director of Defense and Engineering, has said, "It is the policy of the U.S. to develop and maintain defensive CB capability so that our military forces could operate for some periods of time in a toxic environment."

So CBW is not for protecting civilians.

## CHEMICAL WARFARE

The products of research on chemical weapons are less obscure than on biological weapons. Indeed, tear gas, mace and CS are used to fight enemies of freedom both at home and abroad.

Nevertheless, most chemical weaponry is directed at food crops rather than directly at people. Some papers published by the Research Analysis Corporation near Washington, D.C. include these titles:

"Study of Biological and Chemical Attacks on Crops"

"Covert Attacks on Food Crops"

"Impact of Chemical Attack on Guerilla Food Crops"

Some of these studies overlap from pure science into social science—the cultural dependency of peoples on certain foods, the impact on the society's morale when food

## ARMY BLAST

The Army has had civilian scientists do research work on "rice blast" which could result in 76% crop loss if applied deliberately, and wheat rust, which leads to 80% crop loss. Does the Army's interest in these foods arise from a well-hidden but compassionate concern for Third World peasantry? Or does it arise from a fore-knowledge of devastating famines which can be visited upon areas coolly and scientifically selected by the Pentagon?

We may also note that chemical and biological weapons are especially applicable to counter-guerilla warfare. In areas with little industry or building projects, nuclear weapons are not effi-

cient. CBW, which aims at crops and people, is clearly superior.

Defoliant chemicals, used widely in Vietnam to clear the jungles, have the side-effect of impacting the soil so that it becomes useless to support any kind of life for years to come, and chases field rats to the cities where plague is booming. Despite these well-documented effects, or maybe because of them, the Army is intensifying its use of this kind of Modern Chemistry.

## MORALITY AND POLITICS

In order to determine the one must first place it in political perspective. That CBW is most lethal to Third World underdeveloped populations points us to an outstanding characteristic of U.S. foreign policy. In this century and particularly since World War II, the U.S. has been engaged in almost continual struggle in the Third World.

When the people of a country decide they have had enough of U.S. corporations and U.S.-installed military puppets milking their country of its natural wealth, preventing development of a diversified economy, or supporting a small wealthy landowning class, they tend to revolt. On the other hand, the U.S. government recognizes that its corporations make tremendous profit from overseas investment, that it needs foreign military bases to protect those investments, that it wants cheap foreign labor and markets, and that international movements to alter such a system are a grave threat.

Revolutionary socialist and nationalist guerilla movements are the enemy; civilian peasants are, at best, in the way, and at worst, the enemy itself. Correspondingly, CBW serves a purpose: it can move peasants to manageable concentration camps ("pacification"), or if necessary, it can kill them.

CBW research is only an example; it should be clear that any scientific research used by the Pentagon is not "neutral." Such research takes sides in a world-wide political dispute. Unless research scientists decide what side they are on, the Pentagon will decide for them.



# chain of command

Official A.I.P.  
results are in:

21% fewer jobs with

The unemployment rate in physics is now probably around 6-7% and increasing.<sup>1</sup> However, the real situation is even more severe because this figure includes all physicists (i.e. our own tenured professors), and doesn't include those "underemployed" nor those about to be laid off from temporary jobs. Professional employment agencies have been placing frustrated physicists as truck drivers and service station attendants. In other words, the chances of a physics graduate student finding a satisfactory job, or even any job in physics, are exceedingly small.

The unemployment crisis forces us to change some of our traditional attitudes:

—We must begin to recognize and understand the political forces in a society which does not utilize the talent and energy available in its people.

—We must stop regarding ourselves as somehow superior to those with less education with whom we will now be competing in more "menial" jobs.

—We must begin to plan organized political actions.

#### TALENT VS. JOBS

Why can't our society adequately develop and utilize all the people's talents and serve their needs? One should avoid superficial answers, such as, "It's just a temporary lack of confidence in the business community," or "It's the Republican's fault" or fluff-off answers like "This may not be a perfect society, but have you got a better one?"

Instead, we should look toward the motivating force for all economic (and indirectly, socio-political) events. In our capitalist society, this motivating force is the drive for private and corporate profit.

#### PROFIT VS. PEOPLE

It has always been clear that maximization of profit has not been identical to the maximum satisfaction of public needs:

—Industry's reluctance to stop polluting.

—Defense contracts for production and research in support of an unjust war.

—Forced unemployment due to hard times, technology, and job competition.

—Billions of dollars wasted on misleading and degrading advertising.

—Virtually complete corporate control of mass media, "big culture" (via foundations), electoral campaigns, and government cabinet offices and regulating agencies.<sup>2</sup>

But what does the profit system have to do with unemployment in physics? After all, the factors usually mentioned to explain the job crisis are the war, the end of the Sputnik competition, and lack of public support for science. The relation between these factors and the profit motive should be examined.

#### WAR TIME AGAIN

It is a rather perverse feature of capitalism that war can actually be an economic stimulus rather than a tremendously wasteful economic (and human) drain. Military contracts from the Defense Dept. have the dual effect of dramatically increasing corporate profits as well as "creating jobs." Likewise, increased government support for weapons research actually vitalizes all of physics.

The Physics Departments and related research institutes of the large universities are the nation's center for nuclear warfare, ABM and MIRV research, as well as for research in more speculative mega-kill weaponry and communications equipment. And aside from support for direct war research, Physics Departments and faculty depend heavily on grants from the Pentagon or AEC for any research. Indeed, most of physics would collapse if it were not for Defense Dept. or AEC money.

#### SPENDING FOR PHYSICS

It is apparent that the survival of physics is dependent upon war or war-related cut, while the Livermore agencies. When, however, a branch of the same war (like Vietnam) drags on too long, a paradoxical chain of economic events begins. The new "jobs" and high-in support, although both tened consumer demand branches are wholly funded created by government war by the same agency, the AEC.

spending give corporations an opportunity to make a quick profit by raising their prices. Union demands to keep wages in pace with the inflation only serve to raise prices further. But this war-inflation itself hurts profits; it is disastrous to financial institutions with heavy fixed-value property investments as well as to foreign trade.

Concerned about private profit imperiled by the war-inflation, but yet unwilling to stop the war, the government moves to "cool" the economy by curtailing spending on all but the most "essential" military projects. The spending slow-down squeezes out "un-essentials" like the NSF, medical research, and of course, pure and non-military applied physics.

#### AN EXAMPLE

For example, the Lawrence Berkeley Laboratory of the University of California, which does non-classified particle research, was recently cut, while the Livermore Laboratory, which does 85% too long, a paradoxical chain of economic events begins. The new "jobs" and high-in support, although both tened consumer demand branches are wholly funded created by government war by the same agency, the AEC.

To summarize, there is a war-time interplay between corporate profit and government spending which produces, first, quick profit, then inflation and eventual stagnation and unemployment. Likewise, physics was formerly a benefactor of the interplay; now it is a victim of it.

#### NO MORE WAR

However, if the war were to end today, the economy would suffer an immediate depression unless government and corporate money were rapidly pumped into alternative quick-profit-making areas. Physics is not one of these areas. So it appears that the "ground level" of support for pure physics in a capitalist system is low, and we have militarism and the profit system to both thank and curse for the short-lived boom of the fifties and sixties.

(This discussion ignores, for lack of space, the point that an imperialist war like the one in Vietnam, and indeed the Cold War itself, is largely an outgrowth of the expansionist and counter-revolutionary character of a capitalist economy. See for example, Horowitz<sup>3</sup>, Fleming<sup>4</sup>, for well-documented histories of the Cold War, and Kahin and Lewis<sup>5</sup> for a history of the U.S.'s war against the people of Vietnam.)

#### SPUTNIK

Despite that physics is a non-profit activity in a profit economy, another phenomenon aside from war raised its support above the expected "normal" low level: the Sputnik satellite. Particularly in the decade following the Sputnik launch, the U.S. has considered the wealth of this science program not as a public benefit, but as a propaganda point against the U.S.S.R. Science Ph.D.'s were considered national heroes, living proof that "democracy" had a higher I.Q. than "communism." Science became a NATIONAL STRENGTH in the preservation of the FREE WORLD (i.e. the capitalist circle of countries and its colonies), even if it was only non-military research. However, when Neil Armstrong made his "giant leap for mankind," the propaganda fad reached its peak, and now, the expensive science orgy is just about over.

#### NO PUBLIC SUPPORT

We now come to the last factor responsible for starving physics: "lack of public support." Although even the most conservative and aging physicists sagely admit this to be a problem, it is usually treated as nothing more serious than a brief public illness to be cured by large doses of pro-science propaganda. But "lack of public support" has much deeper roots.

It is partly due to the financial and social insecurity most Americans feel, which leads them to favor short-range, quick-result projects, rather than long, risky ones. "What good does physics do for me?" might be a common question asked. In an economy where most people are forced to compete for satisfaction of even the most immediate needs (money, food, shelter), a philosophical answer ("... expanding the frontiers of man's knowledge") will just not be sufficient.

#### MONEY-MINDED MEDIA

Another reason for lack of public support comes, of course, from lack of public understanding. But what can one expect of public understanding when the corporate-controlled and money-hungry mass media places a higher value on stupid advertising which makes them a profit, than on some education and enlightenment. People are not innately stupid, but mass stupidity is certainly encouraged when the people are treated as mere consumers at the market. The result is a greater demand for low-grade programming, and we then complete a "vicious circle" whose root is, again, the profit system.



BIG BUSINESS (to Labor, generously): "My good fellow, you'll be well paid for your patriotic action in tending this glorious plant; you shall have all the fruit above the ground—I'll take ONLY the roots!"

# CAPITALISM

## Kills Jobs on Contact— by the millions!

## (but) Organized Physicists stop bad bread fight decay



ONE TENDS TO HATE  
THOSE ABOVE HIM AND  
FEAR THOSE BELOW HIM.

### UNEMPLOYED INTELLECTUALS

These last points impel us  
to reconsider our traditional  
arrogance as "intellectuals."

We have always been taught that in this system, if one has the brains and initiative, one can succeed. But our own impending unemployment disproves this. Just as society cannot supply the jobs necessary for us to reach our full potential, it could not supply most people with the background, education, social environment, money, and jobs necessary for them to reach their full potential.

True, there is an assortment of different abilities in different fields spread among us. But the point now becoming clear is that a profit-oriented society does not recognize that *all* human beings, regardless of "ability," have a *right* to full development, economic security, and social respect. Instead, people have to continually struggle for these benefits and there are many losers.

### SOLUTIONS

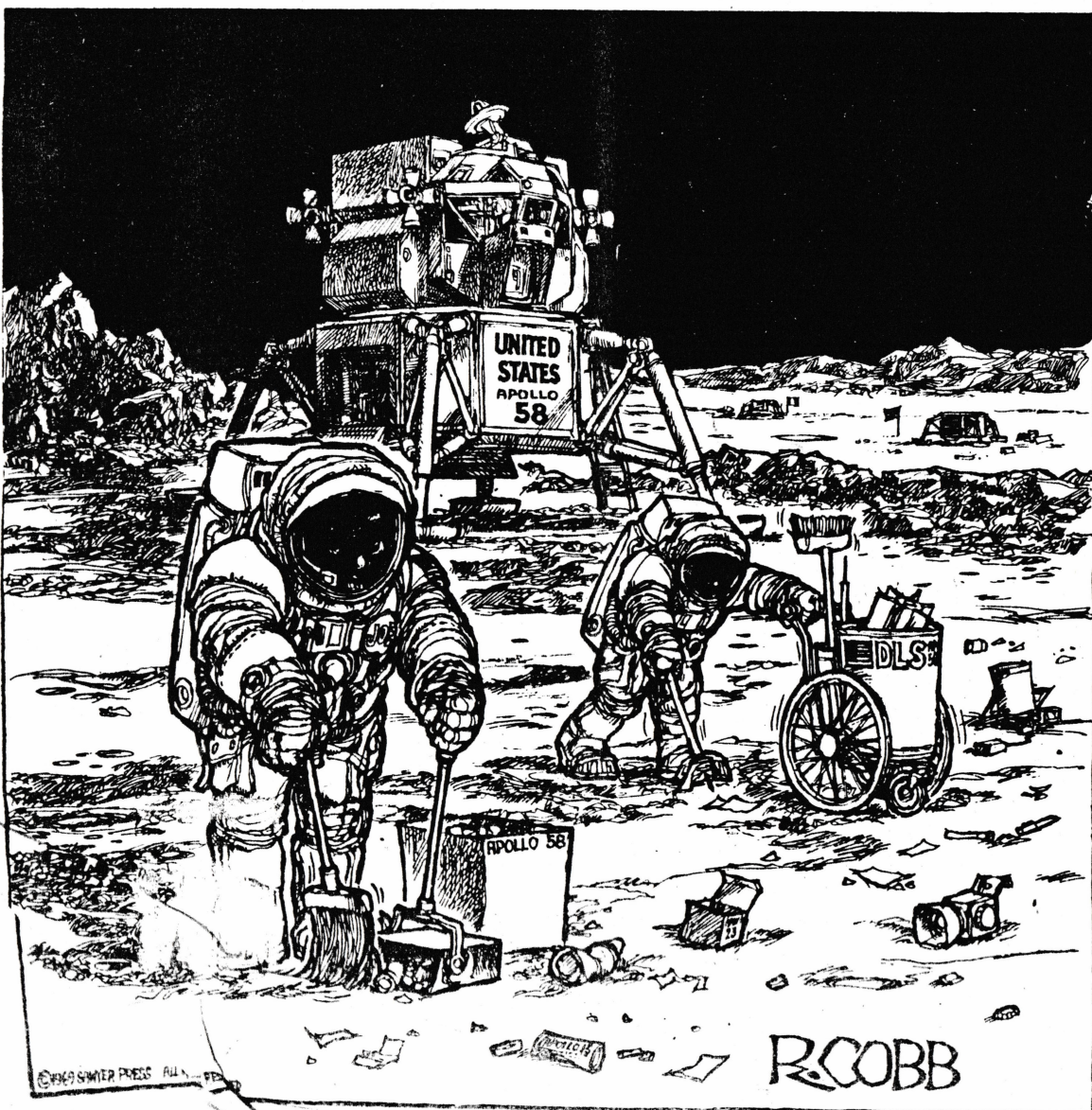
In summary, we can make the following point: PHYSICS IS AILING BECAUSE IT CANNOT IN GENERAL BE RUN FOR A PROFIT. This fact places physics together with many other needs in society which are likewise not funded for the same reason: education, ecology and conservation, housing, elimination of poverty and unemployment. We see that the low ground level of support for physics can only be raised by some temporary perturbation (like the Sputnik scare or weapons research) OR BY ELIMINATION OF THE CAPITALIST SYSTEM AS A MEANS OF ALLOCATING RESOURCES.

The universities, conceivably capable of dispelling some of this ignorance, are typically inaccessible to the average American and his children. The tuition and admission standards are too high; community education programs are feeble; direct instruction, research, and organizational help for working people is non-existent. Universities, run as they are by the corporation executives comprising most Boards of Trustees, are primarily interested in filling the future trained personnel and research needs of industry and government. Enlightenment for the masses does not necessarily serve this end and is therefore not a real goal of the university.

### MUTUAL CONTEMPT

Finally, there is the well-known mutual contempt, between intellectuals and workers, strongly contributing to the "lack of public support" of science. A worker or unemployed black is suspicious of the professors' fancy language, high salary, six hours/week teaching load, and obscure research. Conversely, the professor thinks that anyone who couldn't make it must be a bit dumb (where "dumbness" is defined as not being able to make it, of course!).

In a profit system, which divides people among rigid economic classifications of owner, manager-professional, worker, and unemployed, such mutual antagonisms are quite inevitable. AS LONG AS A SOCIAL AND ECONOMIC LADDER EXISTS,



Vice President of Development  
Glucksville Dynamics  
Glucksville, Calif.

Dear sir,

I am writing in regard to employment with your firm. I have a B.S. from USC and Ph.D. in physics from the California Institute of Technology.

In my previous position I was in charge of research and development for the Harrington Chemical Company. We did work in thermonuclear energy, laser beam refraction, hydrogen molecule development and heavy water computer data.

Several of our research discoveries have been adapted for commercial use, and one particular breakthrough in linear hydraulics is now being used by every oil company in the country.

Because of a cutback in defense orders, the Harrington Company decided to shut down its research and development department. It is for this reason I am available for immediate employment.

Hoping to hear from you in the near future, I remain,

Sincerely yours,  
Edward Kase

Dear Mr. Kase,

We regret to inform you that we have no positions available for someone of your excellent qualifications. The truth of the matter is that we find you are "overqualified" for any position we might offer you in our organization. Thank you for thinking of us, and if anything comes up in the future, we will be getting in touch with you.

Yours truly,  
Merriman Haselblad  
Administrative Vice President

Personnel Director  
Jessel International Systems  
Crewcut, Mich.

Dear sir,

I am applying for a position with your company in any responsible capacity. I

have had a college education and have fiddled around in research and development. Occasionally we have come up with some money-making ideas. I would be willing to start off at a minimal salary to prove my value to your firm.

Sincerely yours,  
Edward Kase

Dear Mr. Kase,

Thank you for your letter of the 15th. Unfortunately we have no positions at the moment for someone with a college education. Frankly it is the feeling of everyone here that you are "overqualified," and your experience indicates you would be much happier with a company that could make full use of your talents.

It was kind of you to think of us.

Hardy Lansdowne  
Personnel Dept.

To Whom It May Concern  
Geis & Waterman Inc.  
Zeigfried, Ill.

Dear Mr. Kase,

I'd like a job with your outfit. I can do anything you want me to. You name it. Kase will do it. I ain't got no education and no experience, but I'm strong and I got moxy and I get along great with people. I'm ready to start any time because I need the bread. Let me know when you want me.

Cheers  
Edward Kase

Dear Mr. Kase,

You are just the person we have been looking for. We need a truck driver and your qualifications are perfect for us. You can begin working in our Westminster plant on Monday. Welcome aboard.

Carson Peters  
Personnel

### WHAT CAN WE DO?

What can we do about the situation? We are obviously not interested in politics leading to another short-lived excited state for physics, perhaps at the expense of other much needed social projects. On the other hand, the elimination of capitalism (although necessary and ultimately attainable) is a much longer-range goal requiring extensive re-education of ourselves and others.

But there are immediate actions we can take concerning the unemployment situation which can be both organizational tools and steps in the needed re-education. Some suggestions are listed below:

1) Form a *union* of physicists that can ally with other segments of the labor movement. The union should call and *enforce* strikes in the field of physics to protest pay cuts, firings, and unemployment. The alliance with other unions will give the demands and strikes some power. The union should also support all other progressive academic and non-academic unions in their actions. The union shall also be a means of posing politically-oriented anti-capitalist demands and active education programs.

2) Demand that the funds wasted on killing Vietnamese be used on social projects, including physics support, and that no corporation be allowed to profit on Defense Dept. contracts (i.e. 100% tax on war profits).

3) Demand an end to university war research of any kind. *Hinder* the progress of such research where possible.

4) Demand that war criminal "scientists" like Edward Teller, Glenn T. Seaborg, etc., divide their salaries among the many graduate students and post-docs who want to do either non-war research or applied research in support of progressive causes.

5) In order to pose the above demands forcefully, we can **DISRUPT AND/OR DEMONSTRATE** at professional meetings, graduations, department seminars, the war criminal's house, etc.

6) Refuse to be co-opted by Democratic Party politicians, who, despite their occasional sincerity, always focus on a superficial problem, the Republican Party, rather than the root problem, the system of private profit.

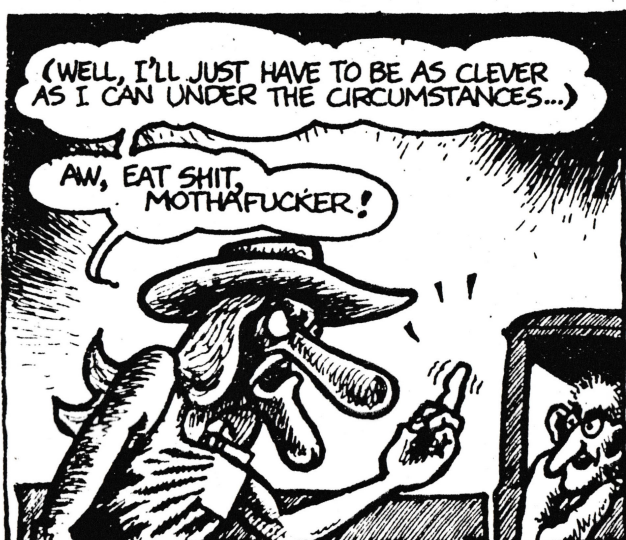
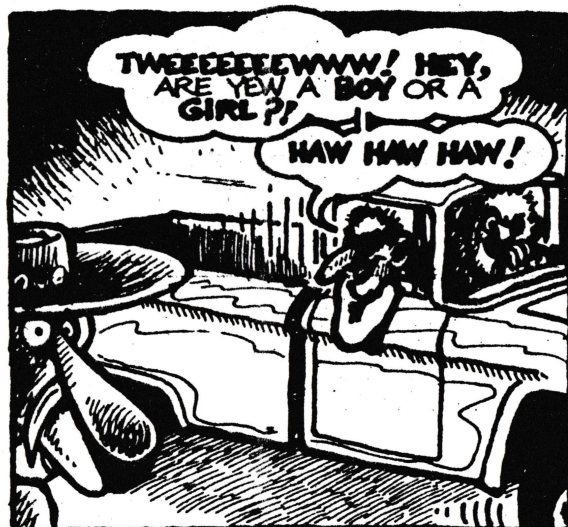
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"Some people think that people are entitled to health care as a matter of right, whether they work or not. This is just as absurd as saying that food, clothing and shelter are a matter of right. One step further than that is a revolutionary system bordering on Communism."

—Dr. Edward R. Amis, past president of the American Medical Association and foe of Medicare, National Health Insurance and other such projects.

# THE FABULOUS FURRY DROG TRIP BROTHERS



# confessions of a g.i. physicist



One week after I completed my quantum mechanics final, I entered the U.S. Army. I ache a bit when I recall those painful moments when I was naive, frightened, alone—Canada and jail didn't seem terribly realistic alternatives to me then. I thought I could beat the draft by entering the Army and praying like hell that they could use my scientific talents for their ends (though the thought of my knowledge being used to design anti-personnel weapons against Vietnamese civilians sickened me a bit). Funny what a man will do to save his skin.

Before entering the Army, physics was an intellectual pursuit, an academic exercise in esoteric math. It was easy to forget the slaughter of innocents while hiding comfortably behind a II-S deferment, so easy to ignore the cry of a war-ravaged nation behind the intricate subtleties of Maxwell's equations. I never dreamed, before entering the Army, that physics could create its own private hell.

I can remember firing my first round of M-16 semi-automatic fire in a foxhole under the Georgia sun with a grizzly drill sergeant swearing at me. I ignored his diatribe long enough to marvel at this splendid war machine. Rifle butt on the shoulder, cheek on the rifle stalk, left palm supporting the barrel, even pressure with the trigger finger... and blam! Physics kills again at 300 yards. If only the freshmen in Physics 12 could see their T.A. gleefully picking off imaginary gooks with his not-so-imaginary M-16, transformed from a quiet slide-rule pusher into an instant instru-

ment of war. The thrill of dropping man-shaped targets with the deadly accuracy of the '16 makes you forget that they've shaved your head clean of your wondrous locks, that incessant machine gun and howitzer fire has made you temporarily deaf, that your knees and elbows bleed from crawling unprotected over rock, that your voice is hoarse from shouting "kill, kill!" and that your brain reels from singing "I wanna go to Vietnam, I wanna kill a Charlie Cong" all day.

Later on, we graduated from basic rifle marksmanship to the horrors of "quick kill." When a man-shaped target pops up in front of you, you instinctively shoot the '16 from the hip, John Wayne-style, and pump automatic fire into his heart. Instant death. It bothered me a little that my target had a coolie hat on...

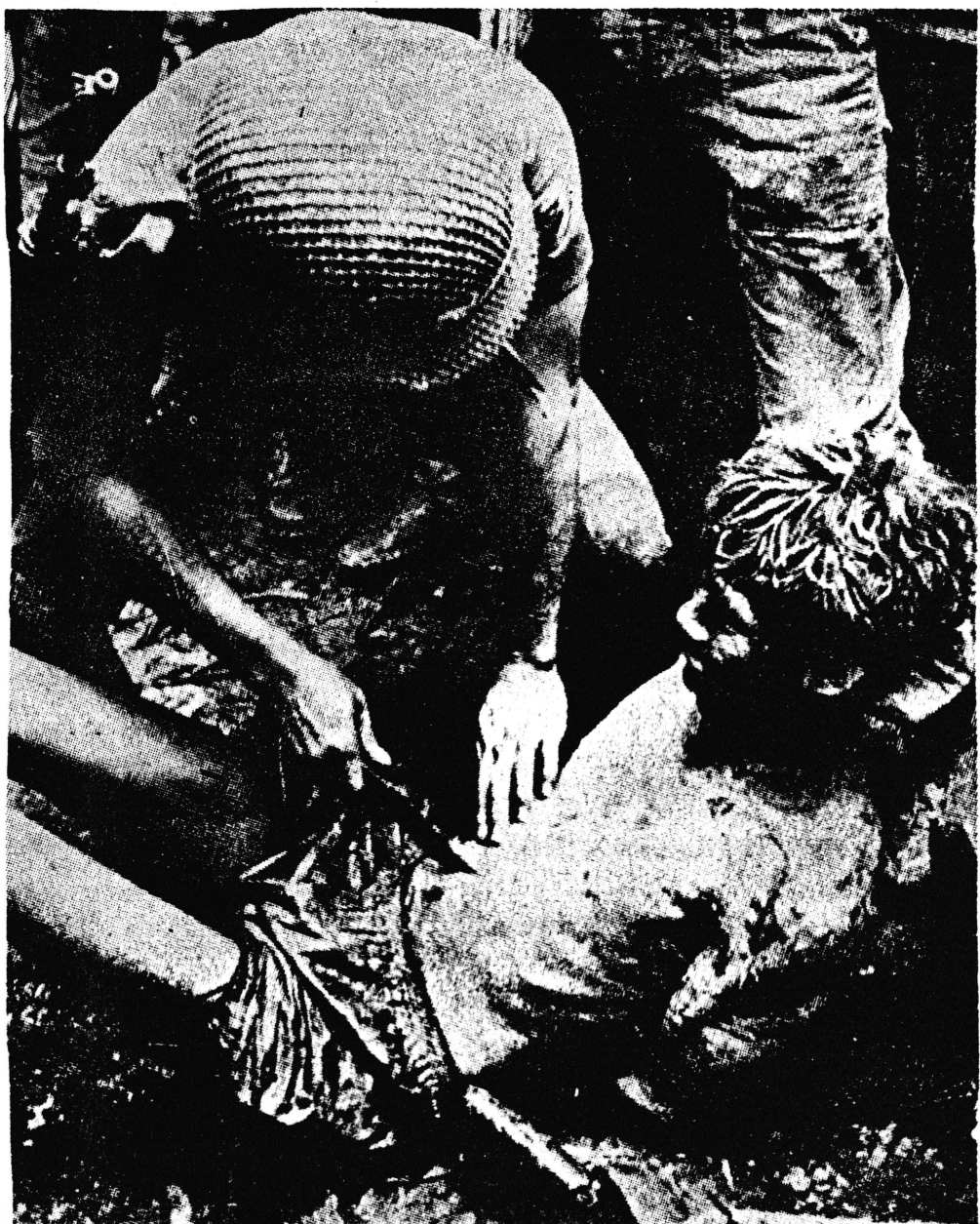
(Strange how the mind chooses to see selectively what it wants. The cleverer the mind, the cleverer the excuses. All around me were instruments of incalculable horror whose touch could decimate thousands, but I chose instead to cloud my conscience with petty academic exercises in physics. For example, it was easy to ignore the noise of a shell impacting on a burnt-out A.P.C. carcass when you're busy calculating its distance away by measuring the lag between sight and sound. Never mind that mortar fire can send shrapnel and flesh-burning white phosphorus for hundreds of feet; I was too busy measuring its time of flight, and hence could calculate its initial velocity and maximum height.)

But one day, our N.C.O. cancelled our regular machine gun training to take us to a night exhibition of firepower in Vietnam. The immense stadium they took us to was filled with Boy Scouts, graying veterans, local dignitaries, and ordinary Georgia folk. The demonstration started abruptly with an ear-shattering explosion followed by a colossal orange fireball several hundred feet high. Then the blackness of the night was pierced by millions of red-yellow shafts of light, tracer bullets shot from dozens of hovering helicopter gun ships. Cluster and incendiary bombs dotted the landscape with tiny mushroom clouds that provided their own illumination for miles around. Amidst the thundering explosions and ack-ack of machine gun fire, the loudspeaker proudly announced the impending demise of an imaginary Viet Cong assault caught in the vicious crossfire of thousands of rounds of bullets, exploding shrapnel, and oceans of fiery napalm. I felt a sudden chill when it dawned on me that this was a scene from Vietnam, repeated hundreds of times over, with real flesh-and-blood people, even entire villages, blown to shreds from the withering fire of American technology gone mad. In the

final moments of the demonstration, the "Viet Cong assault" was halted when the entire arsenal of the infantry and artillery was unleashed: the noise hurt your ears, the lights blackened your retina, and the heat burned your face. It was like peering into hell. As a scientist, I began to understand the meaning of genocide.

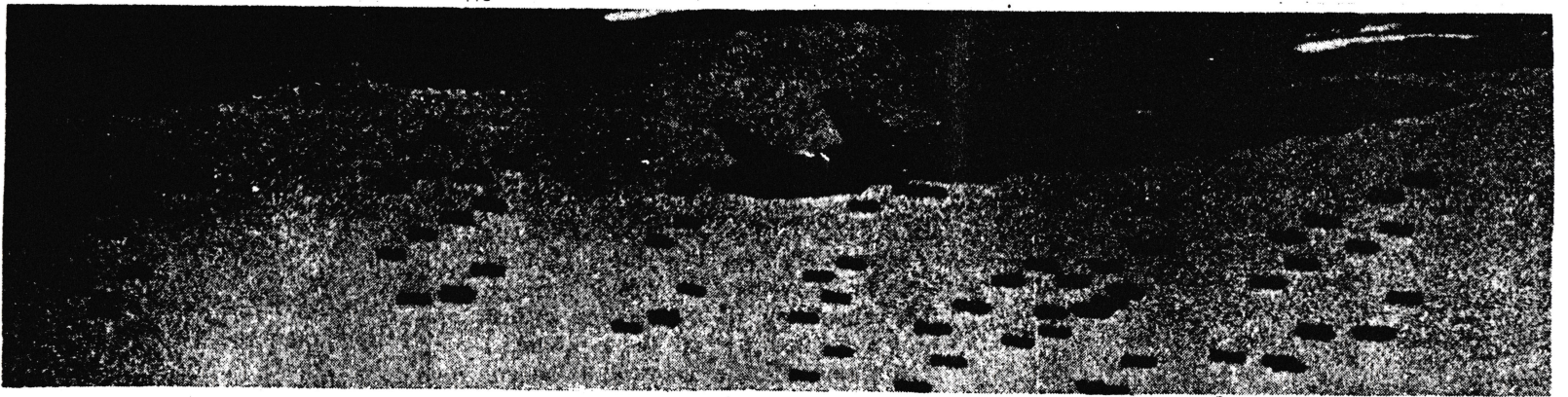
At college, I had always heard of atrocity stories, but chose conveniently to ignore them. But it was one thing listening to long-haired, freaky radicals rant about atrocities, and another to listen to the G.I.'s who committed them. After K.P. one day, a friend confided in me that he overheard a cook boasting of how he cut the breasts off a Vietnamese girl and let her bleed to death. It was eerie talking to N.C.O.'s who blithely mentioned kicking suspected V.C. out of helicopters to their death. But one story will haunt me for the rest of my days. I was listening to a medic one night about how he used to clean up after the Marines butchered a village. It was S.Q.P. for the Marines to round up all the men in a village and methodically machine gun them down. Then the women would be systematically raped or killed. By the time the

continued on back page



# The **BROWNING** of VIETNAM

or



## Physicists can make Good Germans

Gen. William C. Westmoreland once said, "I see battlefields on which we can destroy anything we can locate through instant communications and almost instantaneous application of lethal firepower. With first-round kill probabilities approaching certainty, and with surveillance devices that can continually track the enemy, the need for large forces to fix the opposition physically will be less important." Though troop commitments are decreasing to appease a disillusioned electorate at home, Nixon is escalating the war by unleashing the brutal force of our lethal technology through massive saturation bombings. And physicists have done their part to make possible the hellish nightmare of automated battlefields, where raving generals in the Pentagon can instantly waste entire villages, via satellite, by drone bombers with laser-targeting devices.

Orville Schelle, editor of Pacific News Service, writes, "The war has shown that U.S. firepower is almost limitless. Our inability to win has not stemmed from an absence of ordnance but from an absence of targets. In this technological warfare, our lethal firepower has been turned on society itself, like a broad-spectrum anti-biotic that makes no distinction between wanted and unwanted organisms. Target bombings and air support for ground operations have given way to saturation bombings. Artillery strikes, once called in on specific targets, have evolved into harassment and interdiction (H and I) fire that is shot around the clock into "free fire zones" (now conveniently called "specific strike zones") from coastal and inland fire bases. Navy

guns are now computerized to fire continuously at whole counties for several days running rather than just at isolated targets. Whole villages are incinerated by napalm strikes because of single snipers. Armed helicopters of days gone by have become "gun ships" capable of launching rockets, grenades and machine-gun fire. C-47's now nicknamed "Puff-the-Magic-Dragon," have been armed with multiple "miniguns" that are capable of laying a withering blaze of fire, 18,000 rounds a minute."

### PHYSICISTS

Not content to be left out of the action, physicists have done their part to preserve democracy and goodness. These are some of their poisonous fruits:

(1) Portable ground radar units are used in jungles which pick up the characteristic doppler shifts of slowly-moving targets and convert them into sound. With a little practice, an operator can easily distinguish the humming sound of moving leaves from the rustling sound of a man's moving arms. Anyone or anything unfortunate to give a positive reading meets a fiery death.

(2) Shrapnel in anti-personnel weapons is no longer made of metal needles, which can be detected by X-rays and removed, but of plastic, which is indistinguishable from human flesh on an X-ray chart. The plastic shrapnel, in addition to being impossible to locate on X-ray, is irregularly shaped so that any bodily movement forces them deeper into human flesh. The sadistic engineer responsible for this hellish innovation was not content to merely kill or disable civilians,



but also to add immeasurably to their agony.

(3) Small sensing devices sensitive to traces of ammonia in the air are dropped all over suspected jungle areas. Whenever they detect the sweat of a passing animal or human, they send a radio signal to planes overhead, which obliterate anything found below. In addition to these sweat-detectors, sensing devices equipped with an audio radio system have radioed back conversations of the Viet Cong in the Ho Chi Minh trail.

(4) Radioactive seeding of the Ho Chi Minh trail has been suggested to prevent the shipment of Viet Cong supplies to the South. Like Gen. MacArthur in the Korean War, who advocated detonating a string of cobalt bombs on the border between North and South Korea, our generals have considered seeding lethal doses of radioactive materials to prevent infiltration. Nothing is said about the animals,

plants, and civilians unfortunate enough to sustain radiation burns. Also, a public report, since denied by the military, told of an existing radiation counter capable of sensing radioactive dust kicked up by the marching armies on previously seeded trails.

(5) Small, brightly colored "flutter bombs" are dropped over civilian areas and picked up by curious children. The small charge in each flutter bomb is easily set-off by the pressure of the child's jaw. Killing the child, which only distracts a few adults from the war effort, is not the objective. A child with its jaw blown off, however, easily ties up large numbers of adults. In the true capitalist spirit, the U.S. obviously relishes maximizing the agony of the injured for the lowest cost.

(6) The U.S. Army denies bubonic plague vaccine to suspected Viet Cong villages, thereby indirectly waging biological warfare in



"He took the wraps off our secret weapon!"



South Vietnam. Some writers have even speculated that the U.S. Army started the epidemic of the Black Plague in the first place, so only friendly areas would survive.

(7) Sen. Gaylord A. Nelson of Wisconsin states that "The U.S. has sprayed (in South Vietnam) enough chemicals to amount to six pounds for every man, woman, and child in that country." Orville Schell contends that "over 12 percent of South Vietnam's territory, including croplands and grazing lands, has been damaged or destroyed." A report by the American Association for the Advancement of Science claims that 600,000 people have been deprived of their normal food supply by defoliants. And in 1962, with "Operation Ranch Hand," the U.S. Army began the massive use of herbicides. Its motto was "Only we can prevent forests." These herbicides have been known to produce birth defects. The Saigon Ministry of Health classified the files of malformed babies as "secret" in 1969, thereby fueling rumors of "monsters" being born in the countryside.

(8) The U.S. Army dropped two megatons of conventional bombs over Europe and Japan during the whole of World War II. We drop one megaton of bombs and one megaton of shells *per year* in Vietnam, for a total of around six megatons. This amounts to twenty tons of explosives for every square mile in Vietnam.

(9) Computerized and automated warfare is quickly becoming a reality. Already, lasers are being used to give B-52's targeting systems with pinpoint accuracy. Coupled with a drone pilot system, it becomes the ideal weapon of war. Computers are used to give the best possible estimate for the bombs required in each war zone, the amount of infiltration in each province, the body count for the day, and the assignments for the pilots of war planes and helicopter gunships.

(10) The author once had the dubious honor of witnessing an air strike with white phosphorus. Though the horrors of napalm, or jellied gasoline, are well known, the effects of white phosphorus on human flesh are less publicized. According to the sergeant in charge of the air strike, white phosphorus will burn through the flesh of your hand until it emerges from the other side. The only way to prevent its eating through your hand is to submerge your hand in water, thereby eliminating its air supply. Once removed from water, how-

ever, the white phosphorus once again eats its way through your flesh. It was hard for me to imagine entire villages being covered with thick layers of white phosphorus during the demonstration.

(11) The "McNamara Line," the ill-fated electronic detection perimeter once said to be the answer to infiltration from the North, was the brain child of some powerful figures in physics. One highly respected theoretical particle physicist, whose name I will not mention, was one of the principal investigators of this project.

#### CONTROLLED CITIES

There is a reasoning behind all this technological madness. The war in Vietnam is not the result of stupid blunders on the part of witless generals in the Pentagon, but a calculated policy carefully worked out in think tanks and implemented by our massive firepower. The policy is called "forced urbanization," first publicly articulated in 1968 by Prof. Samuel P. Huntington of Harvard.

In the July 1968 issue of *Foreign Affairs*, Prof. Huntington, Chairman of the Department of Government at Harvard University, stated that the Viet Cong would collapse if there were a "direct application of mechanical and conventional power . . . on such a massive scale as to produce a massive migration from country-side to

city."

The logic is as follows: since the Saigon government only controls the large metropolitan areas, the object is to force the migration of peasants from the Viet Cong-controlled countryside into the cities by saturation bombings. Once the population of the cities is sufficiently inflated by refugees, then the countryside will be declared one big "free fire zone," whereby our bombers will indiscriminately fire on any signs of life. Chairman Mao once said that guerrillas should befriend the peasants, become like fish swimming in the sea. If the U.S. Army cannot remove the fish from the sea, then it will remove the sea from the fish.

The pattern is similar to the Chinese Revolution of 1949, where Mao's forces gained the overwhelming sympathy of the countryside, while Chiang Kai-shek clung tenaciously to the cities. Mao's forces easily laid siege to the cities and secured control over the whole country. Now, the U.S. Army seeks to reverse this tide by using technology to implement forced urbanization, which will deprive the Viet Cong of its peasant support and strengthen the control over urban areas, but at a tremendous moral and human cost.

Already, forced urbanization is taking its deadly toll. In Feb. 1970, anthropologist Gerald Hickey said, "Just 15 years ago, all but 15 percent of the South Vietnamese people lived in urban areas. Now, 60 percent live in urban areas. Saigon has grown from a city of 300,000, which it was designed to be, to more than 3 million." It has a population density of 140 people per acre (Tokyo only has 63). Phnom Penh has grown from 500,000 to a staggering 2 million in eight months. John Hannah, head of the Agency for International Development, told Sen. Edward Kennedy's subcommittee on Refugees that 3.2 million Vietnamese have become refugees since 1965. Orville Schell considers that a conservative figure and places the figure at twice that amount, or approximately *half the entire population of the South*. If true, then about one out of every two South Vietnamese has suffered the consequences of a policy worked out in the highest intellectual circles. Already, drone bombers and trigger-happy helicopter gun-ship pilots patrol free fire zones, which are accounting for a growing fraction of Vietnam's surface area.

But forced urbanization will fail. The combined efforts of our think tanks, generals, and physicists for hire cannot win in Vietnam. They will lose because, along with the migration of frightened peasants into the cities, come the NLF. Already, the representatives of the NLF have been seen actively recruiting in the streets of Saigon at night. And the strength and popu-

larity of the Viet Cong among the people, already legendary, grows with each bombed out village. No weapon developed in our physics laboratories to date is sophisticated enough to sap the will of a people determined to crush the invading U.S. Army. Not even the creations of the finest immoral minds of this country can deny them their victory over American imperialism.

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# the PHYSICS of UNEMPLOYMENT

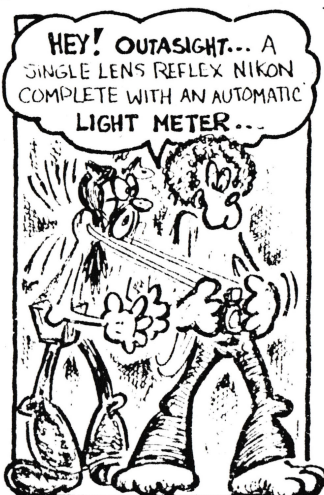
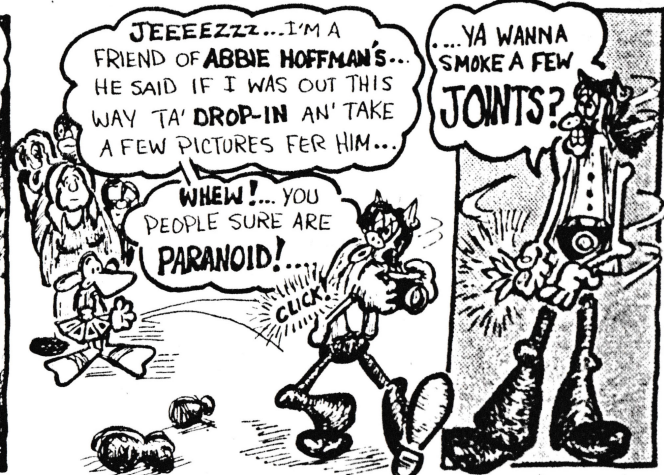
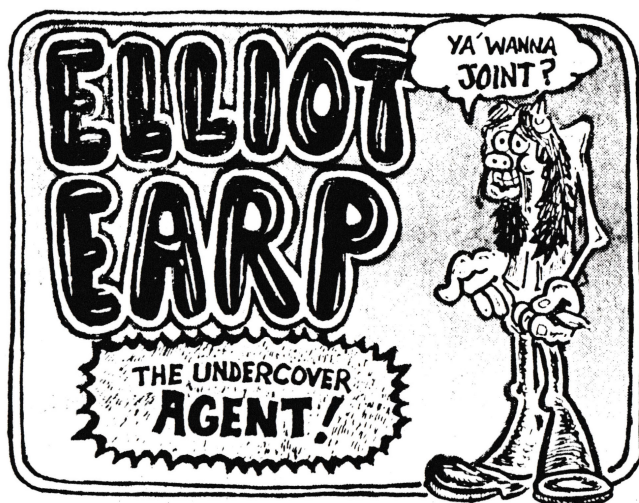


Unemployment is a stark reality among young Ph.D.'s, yet the physics establishment acts as if nothing is happening. Content to pick up fat paychecks from the Department of Defense and summer salaries, physics professors sit smugly in their tenured positions while their own thesis students go jobless. Millions are poured into the N.A.L. accelerator at Batavia while young physicists are thrown out of the field. *Physics Today* stands like a demented Nero fiddling while the physics community burns.

And what has that august body of learned gentlemen, the A.P.S., done to remedy the crisis? Nothing. Platitudes do not get jobs. The A.P.S. has proven to be a morally bankrupt organization, unable to respond to new economic pressures, unwilling to heed the voices of dissent, and all too eager to do the bidding of the Department of Defense. Like the A.M.A. before it, the A.P.S. serves the interests of the privileged few.

In theoretical particle physics alone, there are between 400-600 post doctorates in the field, of which barely 100 get jobs (these figures are the best estimates available because, astonishingly enough, no one bothers to collect accurate figures on the Ph.D.'s in this country). Though these figures tell us we are witnessing a drama of human tragedy, they tell us only part of the story: ruined lives and shattered careers are not uncommon as young people are forced to take menial jobs outside of physics or go on welfare. Department chairmen think nothing of spending \$20,000 on useless pieces of equipment, but balk at the thought of hiring someone.

When I was young, I used to think of physics as a pristine virgin, pure yet exciting. Now, as I am part of that establishment, I think of physics as a whore, willing to sell her wares to the highest defense contractor. Instead of thinking of fundamental problems,



young people publish inordinate amounts of trash in hopes of getting a job. Senile physicists, unable to do anything original, preside over fabulous research grants and exercise dictatorial control over hiring. These senile physicists are fond of saying that perhaps the extra competition will only select out the deadwood. If so, then these senile bags should have been put out to pasture ages ago. Because the great bulk of original thinking in physics originates from young, fresh minds, we are witnessing the death of physics.

The pat alternatives for young Ph.D.'s are bleak. One cannot take high school jobs because a Ph.D. is overqualified, temporary, and demands too much salary; ecology jobs are a sham because, for all their fanfare, there are simply no jobs in ecology. Poverty raises one's political consciousness; if so, then a hell of a lot of young physicists are about to have their consciousness raised.

It is ironic to note that, scarcely six years ago, article abounded concerning the "alarming" reduction in physics undergrad enrollment. Even though the Carrter Report clearly foresaw the present glut on the market, the physics establishment, in the interests of growth, chose to ignore his warnings. "Growth" was good for physics then, simply because growth was fashionable. Growth, unregulated expansion, was declared desirable for physics, ignoring the fact that growth is also the motivating factor behind cancer.

Yet if painful contraction is the rule in most areas of physics, prosperity still reigns for the munitions makers of Livermore and Los Alamos. For the young physicist who

sends 200 fruitless letters to universities yet continues to receive generous offers from weapons laboratories, the message is painfully clear. The ugly economic realities of war and politics favor the ambitious few willing to prostitute their talents to the highest defense contractor.

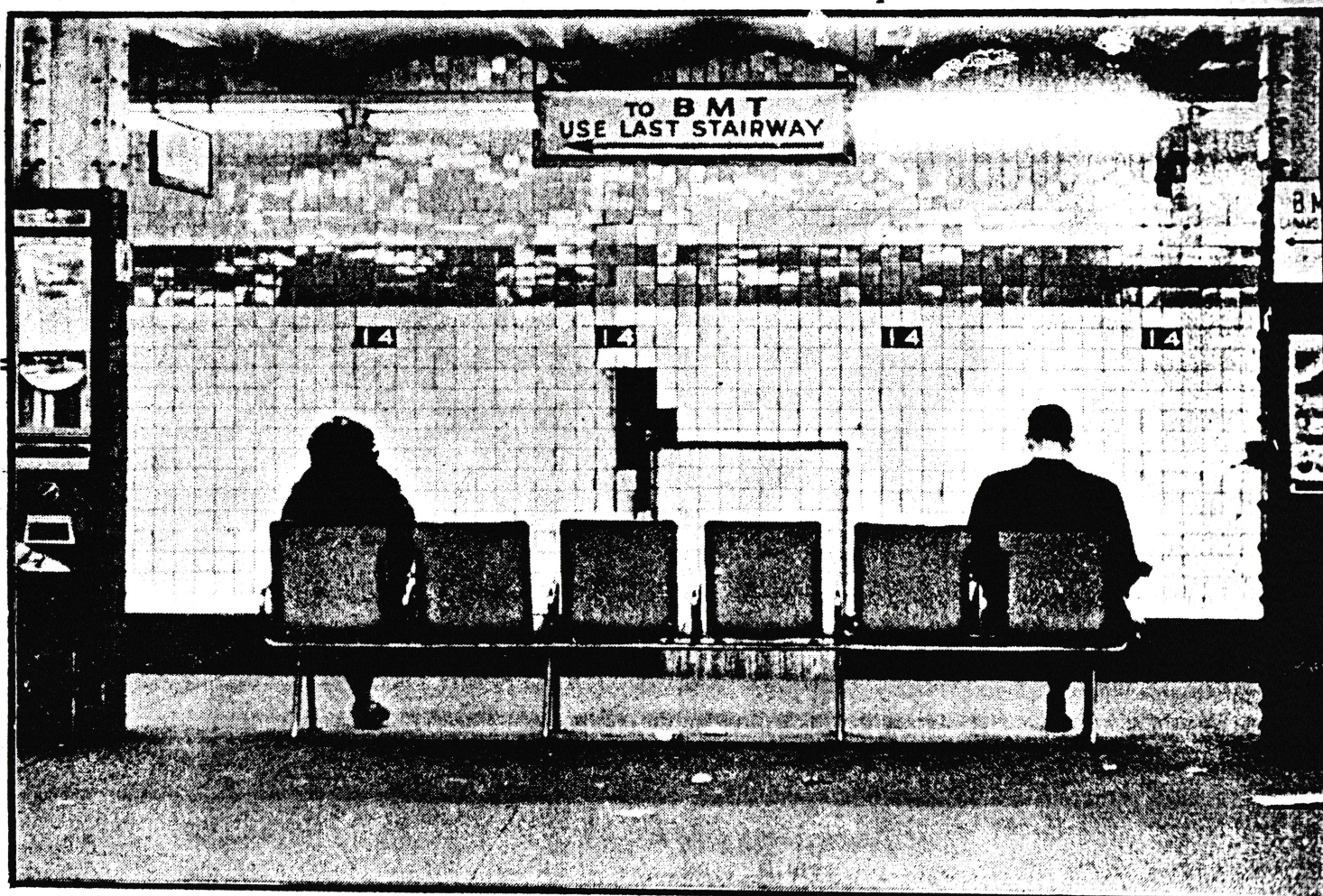
These economic forces, which have laid bare the human greed behind each physicist, are the same ones which once propelled physics into the fastest-expanding, heaviest-financed discipline after WWII. Eager for new, dazzling breakthroughs in weaponry, our war lords long ago pumped fabulous sums into physics in hopes of creating new instruments of terror. To

keep up the facade, the best-known names in physics seduced our congressmen into financing costly accelerators and instrument laboratories, whose spiraling costs were matched only by the inflated promises of future super-bombs. Our so-called leaders in physics, behind their mystical appeals to "unravel the ultimate secrets of matter," left thinly veiled hints of new breakthroughs in atomic weaponry.

But now the bubble has burst. Our congressmen have learned that the advanced basic research supported in our universities was useless in fighting jungle wars in Third World nations. Inflation, spurred by massive expenditures in the Vietnam War, forced the war lords of this country to slash scientific spending in areas no longer deemed vital to the nation's defense. Our leaders have learned that the way to crush the aspirations of the Asian

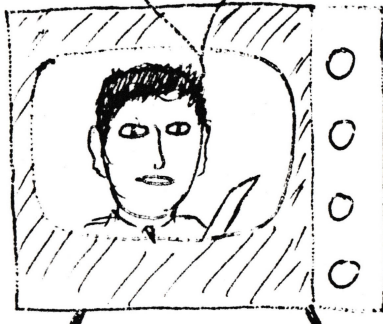
people is not through meson research, but by sophisticated applications of conventional technology. In an era of "automatic warfare," where conventional robot planes saturate vast jungle regions with conventional defoliants and conventional megatonnage, who needs the esoteric formulae of mesons and phonons?

Physicists should realize that the same economic forces which propelled physics into an era of spectacular spending are also the same forces responsible for the present glut. If the tenured pigs in physics have displayed enormous insensitivity to human misery, it is only because decreased defense expenditures have laid bare their human frailties. These economic forces are endemic to the capitalist system we live in, which constantly seeks to use technology to further the exploitation of the peoples of the Third World.



## THE EVENING NEWS

IN AN UNEXPECTED ANNOUNCEMENT TODAY, A GROUP CALLING ITSELF "THE RULING CLASS" APOLOGIZED FOR WHAT IT CALLED "ITS SHAMEFUL TREATMENT OF THE AMERICAN WORKER OVER THE PAST CENTURY."



THEY FURTHER STATED THAT, AS PROOF OF THEIR SINCERITY, SOCIALISM WILL BE INSTITUTED, STARTING TOMORROW.

AND NOW, THE WEATHER.



A WEATHER BULLETIN RECEIVED HERE FROM A MAN CALLING HIMSELF "SATAN" SAYS, "IT WAS VERY COLD DOWN HERE TODAY." HE SAYS "THE PLACE IS FROZEN OVER."



# PRISON ECOLOG

The following is an exclusive *Physics Free Press* interview with Oswald Park, chief warden of San Attic State Correctional Institution:

**Q:** In view of the recent prison riots at San Quentin and Attica, what have you, Mr. Park, done at San Attic to prevent a similar occurrence here?

**A:** Well, there are two approaches we take. The first is remedial: we separate all the revolutionaries, militants, blacks, draft card burners, pot smokers, and war protesters, and put them in solitary where they can't stir up trouble. And second, we are undertaking certain reforms.

**Q:** What reforms, specifically?

**A:** We here at San Attic are most proud of our drive to make prisoners concerned about social problems in a constructive, not destructive, mind you, way. With this in mind, we have created a prison program in ecology!

**Q:** Far trucking out. How do you do it?

**A:** Well, you know that big chemical plant about a mile upwind from here that puts out all those corrosive fumes? Well, in order to fight that pollution, every week the prisoners are formed into teams to scrub down and repaint the prison walls. Once in a while, a prisoner mumbles some nonsense about offing the chemical plant directors (he is immediately separated), but most of the prisoners are genuinely proud to keep the prison clean and ecological—after all, it is THEIR prison.

**Q:** Any other projects?

**A:** Yes. The prisoners are now asking their visitors to walk to the prison, rather than drive private automobiles. And oh yes, we encourage homosexuality to teach the prisoners population control, and to save trees, we limit the supply of toilet paper.

**Q:** Has this reform been effective in inspiring prisoners to become more socially oriented?

**A:** We would say very effective. Some former militants have seen the light and have given up organizing against the prison authorities. We have even seen some stirrings of the ecology movement down on death row. The wild demands we used to hear about food, pay, political freedom, parole, beatings from guards, transportation to a liberated country—all are happily gone. Why some of our satisfied graduates, as we call released prisoners, have

called me to say they found the prison program excellent preparation for the world outside; indeed they find little difference between the two worlds.

**Q:** Where did you get the idea of using ecology to quiet the prison revolt?

**A:** Well, a few months ago, I got a home electric bill with a new 20 percent rate increase. I was pretty pissed off so I called the electric company and their PR man told me the money was going to curtail the company's contribution to air pollution, so wasn't I satisfied my money was going

## The Ecology Fight--'Good For Morale'

Indianapolis

The environmental program may be just what Americans need to restore their faith in government, William D. Ruckelshaus, director of the Environmental Protection Agency, said yesterday.

"What our society very badly needs is some successes," he told the Midwest Region Republican Conference.

"We need to have a difficult problem which we have faced, come to grips with, and have begun to solve," he said.

Ruckelshaus said that during the 1960s the American public was promised so much which couldn't be delivered that many people became disillusioned with the government.

"People's expectations rose to the sky," he said. "When people felt these expectations were not being realized, disillusionment set in."

Ruckelshaus said public officials should not promise too much.

In the environmental program, he said, "We can't promise instant reversal, but we can promise progress."

"It's going to take time, government reforms, and money," he said.

Associated Press

to a good cause? That's when I got the prison ecology idea.

**Q:** So you might say that prisoners have found not only ecology in a prison, but a prison in ecology? **A:** That's right... Hey, wait a minute! You one of those dilettante revolutionaries?

## Letter... continued from pg. 2

cost half as much to run. (What if 30 years ago they decided, before the invention of the synchrotron, to go to 1 GeV by building a mile high Van de Graaff?)

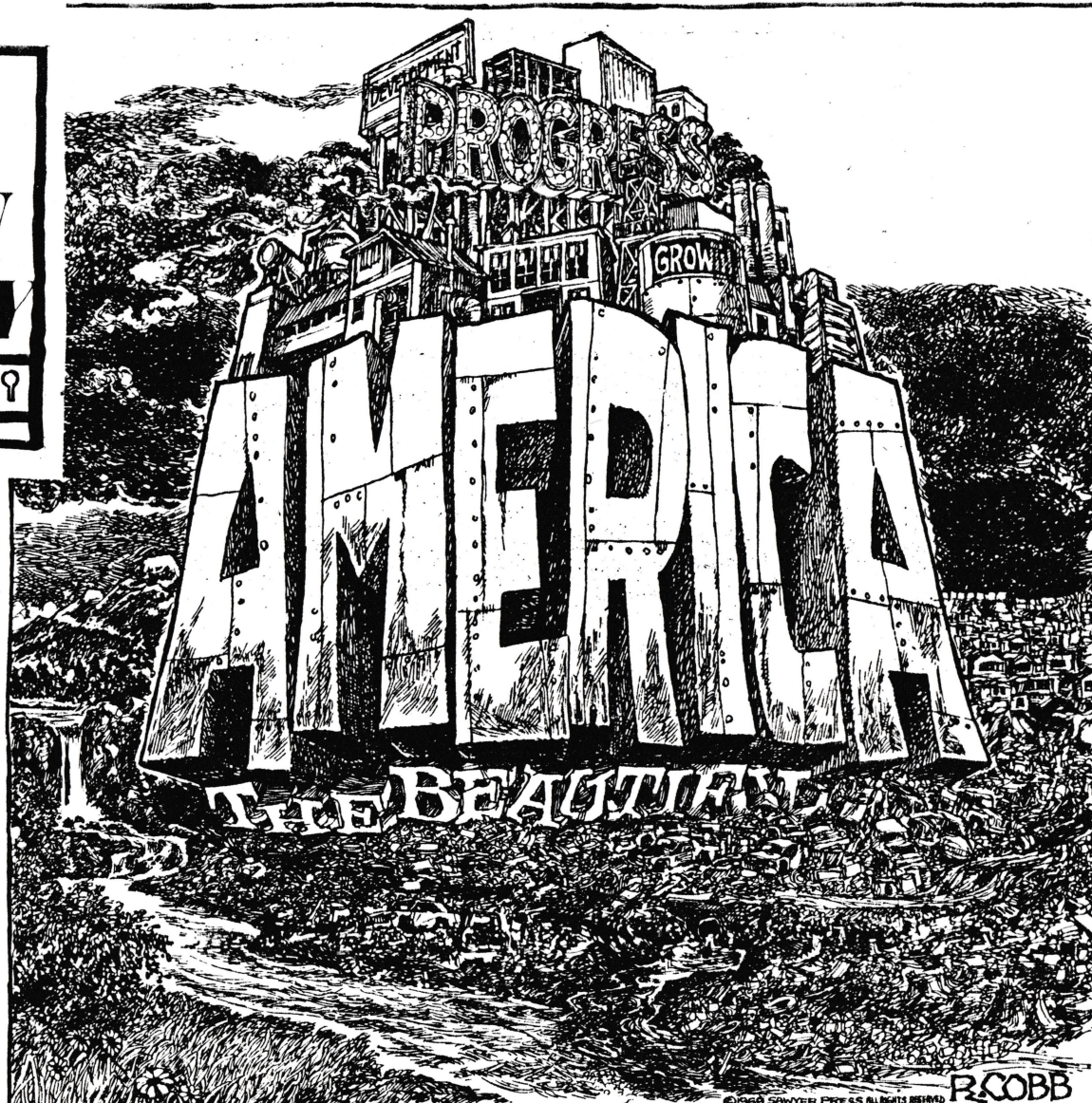
I think that the present state of high energy physics could be best understood by historical analogy. Suppose we had the present system 400 years ago when we were just beginning to figure out the laws of planetary motion. *Physical Review* would be full of papers like "A Fifteen Epicycle Fit to the Orbit of Mars," "A Twenty Epicycle Fit to the Orbit of Venus," etc. Copernicus and Kepler would have their papers rejected as too speculative.

The telescope, or course, would not have been invented yet and it is very doubtful that Galileo would have been able to get a grant for such a hair-brained scheme as the development of such an instrument. However, the Astronomical Exploration Commission (AEC) would be spending \$250 million thalers to build the National Astrolabe Laboratory (NAL) which would consist of a single astrolabe one mile in diameter. Physicists have been saying that such an instrument is abso-

lutely necessary for the progress of planetary science since it would enable us to get a much better determination of the epicycle parameters. Meanwhile, Isaac Newton, a young undergraduate at Cambridge, having heard that there are no jobs in physics, has decided to go to Law School.

I have been playing some arithmetic games with the NAL operating budget to sort of put it into perspective. (One might as well forget about the \$250,000,000 construction cost since that has already gone down the drain. It is highly doubtful that more than an infinitesimal fraction of that could be recovered by, for example, selling the magnets for scrap metal and renting the tunnel to the local farmers as a fallout shelter for their cows.) The operating cost of NAL is \$60,000,000 a year. \$60,000,000 a year is \$5,000,000 a month, or more than \$1,000,000 per week! Even if there were no job crisis, even if we both already had tenure, it is doubtful that either of us could earn in our lifetime what it costs to run NAL for 3 days. If someone

(continued next page)





DEAR ABBEY

## Impotent Physicist



DEAR ABBEY: Being a socially conscious physicist, I contributed in 1960 to J.F.K.'s New Frontier campaign. Then, in 1964, I contributed to L.B.J. to stop trigger-happy Barry. In 1968, I supported Nixon's secret plan to end L.B.J.'s trigger-happiness in J.F.K.'s new frontier in Vietnam. Since Dicky turned out tricky, I am supporting Muskie in '72. But, Abbey, over these years, I have become increasingly impotent. What should I do?

Impotent Physicist

crowd of young graduate students outside my house. They march around, chant, protest, call me a pig, a war criminal, and oh Abbey, other things too vile to repeat. But being a non-violent man, I do not argue or fight with them, but instead call the police, who beat the shit out of them. But they keep coming back and I find it increasingly embarrassing among my colleagues. Why don't these foul-mouthed freaks stop upsetting my world and let me do my weaponry calculations in peace?

Friend of

Glenn Turd Seabottom

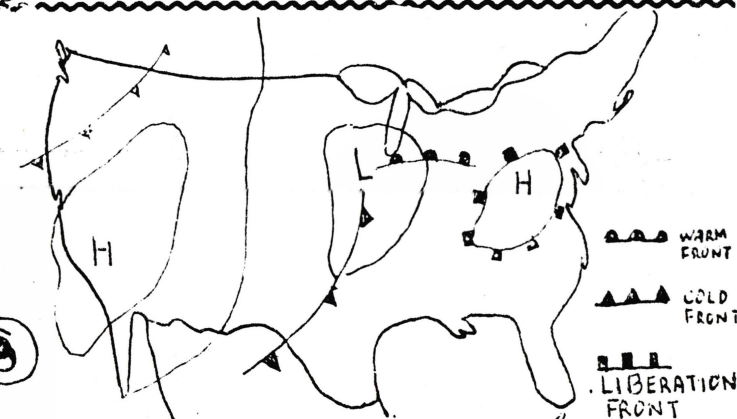
DEAR IMP: How dare you!

This column is reserved to help those with problems of sex, pornography, promiscuity, immorality, and just plain rudeness. Politics is taboo!

DEAR ABBEY: During the day, I perform calculations on nuclear war fireball communications and all my physicist colleagues at the Big U. respect me for this. But when I go home, there is always a

DEAR TURD FRIEND: Your attitude is entirely too rigid. You should encourage these foul-mouthed freaks to seek professional psychiatric counseling before calling the police.

CONFIDENTIAL TO D.D.T.: If you've seen one nuclear war you've seen 'em all.



## Weather Summary

The effects of two large high pressure areas of hot stagnant air centered near Washington, D.C. and San Clemente, Ca., continue to linger over most of the nation today, producing inversions and reduced visibility in smog. However, a layer of very cold air due to the wage-price freeze is lying atop the vapid mass below and has caused considerable turbulence followed by the usual extensive cloud cover of bullshit.

As a consequence, good weather has been enjoyed by those few at very high altitudes, but poor-to-fair conditions prevail for most of middle and urban America.

Typhoon Vietna is intensifying and swirling toward the U.S. mainland. The typhoon has been experimentally seeded with napalm, agmentation bombs, and other newly developed devices, but it has nevertheless grown more intense. The typhoon is believed to have been spawned by an extension of North American air into Southeast Asia.

## Letter...

answers that maybe your work or my work isn't worth that much, ask him who was the one man who made the greatest contribution to physics in this century. As every grade school kid knows, the answer is Einstein. Although I don't have the exact figures, I doubt that Einstein earned in his lifetime enough money to run NAL for 3 days.

And if NAL comes up with a quark, monopole, tachyon, or intermediate boson, I'll eat it. If they don't, then R.R. Wilson will undoubtedly say that we've got to go for higher energy, so fork over another \$100,000,000 to make the machine superconducting. Our reply should be "Over our dead bodies, you bastard!"

(The whole situation reminds me of an incident I witnessed at the Helsinki Zoo. During feeding time in the pigsty, the biggest, fattest pigs were always the first to gorge themselves, displacing the smaller, weaker (but more numerous) piglets. Like the principle investigators, these fat pigs are the first to arrive at feeding time, with their cry "Oink, oink, what's in it for me? What's in it for me?" Obviously, this situation cannot be remedied merely by asking the pigs to stop acting like pigs. They will either laugh in your face or else give you an hour and a half explanation as to why fat pigs need every grain of oats that they eat. However, if we were able to pounce on the largest pig sitting on the largest pile and tear his throat out, I'm sure that the others would fall into line. At the moment, the biggest pig of them all is Dr. R.R. Wilson, sitting on NAL, and that's why I would like to go after him and force his resignation as director.)

As always, the central question is the question of power. There is a small, closed clique of over-rated has-beens who for all practical purposes run physics. They sit on the committees that decide who gets grants, who gets machine time, who gets Sloan or NSF fellowships, who gets a job

and who starves. This leadership has demonstrated not only that it is incompetent, but that it is totally and irredeemably morally bankrupt. It should not surprise us that these fellows who will work for JASON and IDA to devise new and more effective ways to slaughter Vietnamese will not lift a finger to help when hundreds of their colleagues are out of work. This, however, is not the central problem. Any system where a few make all the decisions and the rest of us are powerless, is rotten, no matter who those few are. The APS is about as democratic as the Saigon government. There is much dismay because President Thieu ran unopposed, yet when was the last time there were two candidates for the President of the APS?

For the moment, for reasons of tactics, I think it is

best to go after individuals. At the moment, R.R. Wilson is the biggest pig in the pigsty and I want his scalp. I will go after his scalp if I have to do so alone. I want his scalp because I am a bitter and vindictive person, because this job hunting has made me a nervous wreck, because I have to take my sanity from a bottle of tranquilizers, because I have lived in four different places in the last five years, because last week I had to say goodbye to a woman who I may have loved and who may have loved me and because she was crying when I left, because we were not given the time to find out whether we loved each other or not; I want R.R. Wilson's scalp and for you I have, at the moment, only one question: Will you help me get it?

An Assistant Professor  
in theoretical  
high energy physics



THE WORLD IS AT  
A TURNING POINT



THERE'S A SAYING THAT EITHER THE  
EAST WIND IS STRONGER THAN THE  
WEST WIND - OR THE WEST WIND IS  
STRONGER THAN THE EAST WIND.



TODAY THE EAST WIND  
IS STRONGER THAN  
WEST WIND.



THAT IS TO SAY THE FORCES OF  
SOCIALISM ARE STRONGER THAN  
THE FORCES OF IMPERIALISM.

# G.I.

## Confessions

(continued from pg. 9)

medics would arrive, the Marines have already left behind shredded bodies of men and hysterical women who had been gang-banged. After surveying one such hideously desecrated village one day, he rounded up the surviving children on his ship and sent them back to base headquarters. The Vietnamese children, the last survivors of the massacre, never arrived, for the G.I.'s aboard ship festered with such hostility against the slants that they threw the children overboard, one by one, until every last inhabitant of the village was dead.

I had plenty of time to ponder over these disturbing incidents alone while night patrolling in some nameless swamp or when peering out of a fox-hole for night war games. These memories bothered me. Gazing blankly at the stars from a pup-tent, I would sometimes rethink many of my cherished notions of academic license and came to disturbing, upsetting conclusions. These memories haunted me, for I was prepared to do research on the weapons that made these unspeakable crimes possible. These memories linger on, though I have been medically discharged from the Army.

Though the Army seems light years away, I feel uncomfortable at times doing basic research at the university, knowing that some of my neighbors are engaged in lucrative consulting for the Department of Defense. It bothers me that some of the finest minds in physics willingly, even enthusiastically, do the bidding of our war lords, for a price. One famous professor down the hall from me even does research on communicating through the wake of nuclear fireballs (valuable information during the last five minutes of humanity). Thinking back to some of my days in the Army, I find it difficult to hold back my anger. Watching these smug, well-paid munitions makers walk down the hall, at times I get the urge to grab them by the lapels and scream into their faces:

"MAN, HAVE YOU NO MORALS? WHAT KIND OF ANIMAL ARE YOU?"

It is hard for me to do physics, when I'm still fresh with memories of the insane brutality of the Army. It is hard doing research knowing that some of my colleagues are war criminals.

